

Please add new claims 90 and 91 as follows:

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--90. A maize plant stably transformed with *Agrobacterium* comprising a nucleic acid of interest, wherein the maize plant is an inbred line other than A188.

91. A seed produced by the plant of claim 90.--

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#### REMARKS

Claims 74-89 are pending in the application. Claims 74-81 and 84-89 are cancelled without prejudice. Claims 82 and 83 were cancelled in the Amendment mailed by Applicant September 24, 1999. New claims 90 and 91 are added. As indicated by the Examiner support for "an inbred line other than A188" is found on pages 2 and 25. Support is also found on page 26, last full paragraph.

Claims 75, 77 and 82 are rejected under 35 USC 112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claims 75, 77 and 82 have been cancelled without prejudice in order to expedite prosecution.

Claims 74-89 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 74-89 have been cancelled without prejudice. New claim 90 has been written as suggested by the Examiner in order to expedite prosecution.

Claims 74-89 are rejected under 35 USC 102(a) as being anticipated by Ishida et al. (Nature Biotechnology 14: 745-750, 1996). The Examiner states that Ishida teaches transformed maize plants and seeds, including A188 maize plants and seeds, as well as A188 hybrid plants and seeds and that all of the claim limitations are anticipated by Ishida.

New claim 90 requires an inbred line other than A188. New claim 90 requires that the maize plant is "an inbred line", therefore distinguishing over transformed A188 hybrids. New claim 90 also requires that the maize plant is "other than A188", therefore distinguishing over transformed A188 lines. Ishida et al. does not disclose or suggest such a plant.

Claims 74-89 are rejected under 35 USC 102(b) as being anticipated by Goldman et al. (US Patent No. 5,177,010).

New claim 90 distinguishes over the '010 patent by requiring a maize plant "stably" transformed. It is respectfully submitted that the '010 patent is not enabling for a maize plant stably transformed with *Agrobacterium*.

Enclosed is a copy of *Plant Genetic Systems. N.V. v. DeKalb Genetics Corp.*, (D. Conn. 2001). An issue before the court was whether transformation of monocots was enabled in 1987. Plant Genetic Systems (PGS) relied on a Graves and Goldman article published in 1986, *Plant Molecular Biology* 7:43-50 (1986) to support enablement of monocot transformation. The court disagreed with PGS stating, "In the article, however, the authors expressly state that the detection of opines was not unambiguous proof that they had transformed the corn plants", PGS. at page 16, last paragraph. A copy of the Graves and Goldman article is provided for the Examiner's convenience, see page 49, first column, middle of the page.

This viewpoint was reaffirmed at the deposition of Anne Graves during a discussion of her work. Thus, the authors themselves recognized that testing the corn plants for the presence of opines was not conclusive evidence that they had stably incorporated a heterologous DNA sequence into the plants genome. Additionally, other researchers in the field came to have reservations about the Goldman and Graves work. Researchers at Eli Lilly attempted to repeat the published work and confirm that T-DNA had been incorporated into the corn's genome. The Lilly group could not confirm the authors' original observations concerning opines produced by infected plants or detect the presence of any foreign DNA in either a Southern blot or a Northern blot experiment, PGS at pages 17-18.

Further, a witness designated by PGS stated under oath that Goldman and Graves did not describe a successful transformation, *Id.* at page 19. Difficulties in developing a method of *Agrobacterium* transformation are discussed, *Id.* at page 20-21. The court held that the defendant presented clear and convincing evidence that the so-called monocot barrier was still firmly in place in March of 1987, *Id.* at page 22. This date is subsequent to the filing of the '010 patent.

Proof of stably transformed plants requires rigorous evidence and controls. Such evidence includes a tight correlation between physical (e.g. Southern blot) and phenotypic (e.g. enzyme assay) data, complete Southern analysis containing the predicted signals in high-molecular weight DNA and correlation of the physical and phenotypic evidence with transmission to sexual offspring and molecular and genetic analysis of offspring populations. See I. Potrykus, *Ann. Rev. Plant Physiol. Plant Mol. Biol.* 1991, 42, pp. 205-225, at 208 top of page. No DNA evidence is shown in the '010 patent.

Claims 74-89 are rejected under 35 USC 102(e) as being anticipated by Hiei et al. (U.S. Patent No. 5,591,616)

New claim 90 distinguishes over Hiei et al. as discussed above for the '010 patent. New claim 90 requires an inbred line other than A188. Hiei et al. only discloses A188 and hybrids of A188.

Claims 74-89 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-62 of U.S. Patent No. 5,981,840.

The present application has been amended to indicate that it is a divisional of co-pending application U.S. Serial No. 08/788,018 filed January 24, 1997, now U.S. Patent No. 5,981,840. The divisional was filed in response to the Examiner's Restriction of the inventions.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

Serial No. 08/963,096  
Group Art Unit: 1638

In view of the above comments and amendments, withdrawal of the outstanding rejections and allowance of the remaining claims is respectfully requested.

Respectfully submitted,

A handwritten signature in cursive script that reads "Marianne H. Michel".

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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### **In the Specification:**

Paragraph beginning on page 1 of the specification, after the title, has been added as follows:

### CROSS REFERENCE TO RELATED APPLICATIONS

This application is a divisional of co-pending application U.S. Serial No. 08/788,018 filed January 24, 1997, now U.S. Patent. No. 5,981,840.

### **In the Claims:**

Claims 74-81 and 84-89 have been cancelled without prejudice.

New claims 90 and 91 have been added as follows:

90. A maize plant stably transformed with *Agrobacterium* comprising a nucleic acid of interest, wherein the maize plant is an inbred line other than A188.
91. A seed produced by the plant of claim 90.